Table 10-2 (Continued)

Letter Grade	School-Awarded Mark			Diploma Examination Mark			Final Blended Mark		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Mathematics 30									
A (80-100%)	20.3	21.2	19.4	20.7	22.4	19.0	19.5	20.9	18.1
B (65-79%)	30.9	30.0	31.8	25.0	24.3	25.7	27.5	27.1	28.0
C (50-64%)	37.0	35.8	38.2	25.9	25.5	26.3	37.1	35.8	38.3
F (0-49%)	11.8	13.0	10.6	28.4	27.8	28.9	15.9	16.2	15.6
Average (%)	65.6	65.6	65.5	62.0	62.6	61.3	64.2	64.5	63.8
Standard Deviation (%)	14.7	15.3	14.1	18.8	19.1	18.4	15.9	16.4	15.5
Biology 30									
A (80-100%)	21.0	20.6	21.3	20.9	23.0	19.3	20.3	21.5	19.4
B (65-79%)	34.9	34.7	35.1	26.0	27.4	25.0	30.5	31.0	30.1
C (50-64%)	35.8	35.7	35.8	27.5	27.3	27.7	35.8	35.2	36.2
F (0-49%)	8.3	9.0	7.8	25.6	22.3	28.0	13.4	12.3	14.3
Average (%)	66.8	66.6	67.0	62.7	64.3	61.5	65.1	65.8	64.6
Standard Deviation (%)	13.2	13.5	13.1	17.9	17.7	18.0	14.9	14.9	14.9
Chemistry 30									
A (80-100%)	23.9	25.3	22.5	26.4	30.0	22.8	24.6	27.1	22.2
B (65-79%)	35.3	34.6	35.8	27.9	27.6	28.2	32.4	31.9	32.8
C (50-64%)	31.9	30.3	33.6	26.7	24.7	28.7	32.0	29.8	34.2
F (0-49%)	8.9	9.8	8.1	19.0	17.7	20.3	11.0	11.2	10.8
Average (%)	67.8	68.0	67.6	66.0	67.4	64.7	67.3	68.1	66.5
Standard Deviation (%)	14.1	14.7	13.5	17.8	18.2	17.4	15.3	15.7	14.7
Physics 30									
A (80-100%)	29.1	28.5	30.3	24.7	26.2	21.7	26.0	26.6	24.8
B (65-79%)	38.0	35.6	42.8	29.8	29.5	30.6	34.7	33.1	37.7
C (50-64%)	27.1	28.9	23.4	28.3	26.8	31.2	31.1	31.1	31.3
F (0-49%)	5.8	7.0	3.5	17.2	17.5	16.5	8.2	9.2	6.2
Average (%)	70.4	69.7	71.7	66.0	66.3	65.5	68.6	68.4	68.9
Standard Deviation (%)	13.5	14.0	12.4	16.6	17.0	15.8	14.2	14.7	13.3

SECTION 11
RESULTS FOR POPULATION SUBGROUPS

Introduction

The majority of students who wrote the June 1989 diploma examinations took the course in school and did not have mature status. The second largest group were students who took the course in school and had mature status.* For ease of reference, students who do not have mature status will hereinafter be termed "non-adult" and students with mature status will be termed "adult"; these terms are not used in any legal sense.

Sections 1 to 10 presented results for all non-adult and adult students who wrote a diploma examination and had an earlier or current school-awarded mark in that course. Results for non-adult and adult students with no school-awarded mark are reported in this section only.

Subgroup Definitions

The purpose of this section of the report is to compare results for students in subgroups defined by a combination of mature status and school-awarded mark status. The subgroups are as follows:

- Regular School: students who had a current school-awarded mark and a current diploma examination mark. This group comprises

  Non-adult in School: students who did not have mature status and had a current school-awarded mark and a current diploma examination mark, and

  Adult in School: students who had mature status and had a current school-awarded mark and a current diploma examination mark.

- Non-adult School Mark Brought Forward: students who did not have mature status and had no current school-awarded mark but did have an earlier school-awarded mark.

- Adult School Mark Brought Forward: students who had mature status and had no current school-awarded mark but did have an earlier school-awarded mark.

- Adult Challenging Examination: students who had mature status and had no school-awarded mark.

- Non-Adult No School Mark: students who did not have mature status and had no school-awarded mark.

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*A student with mature status is one who is 20 years of age or older *or* is 19 years of age and has been out of school for eight consecutive months since reaching the age of 18 *or* is the holder of an acceptable high school diploma or equivalent (see the *Guide to Education, Senior High Handbook 1989-90*, page 62).

Note:

1. Adults challenging a diploma examination receive course credit if they pass the examination; non-adults receive no course credit.

2. When an adult student earns a diploma examination mark that is higher than that student's school-awarded mark, the former becomes the final mark; otherwise, the normal blending is done to calculate the final mark.

Excluded Groups

Not included in any of the groups are students who were exempt from all or part of the examination or who wrote a substantially different form of the examination because of special considerations. Students in English 30 or English 33 who wrote the two parts of the examination in two different examination sittings (e.g., January and June) are also excluded. Very few students fall into these categories.

Organization of Tables

Three tables are provided, pages 91 to 104, for each diploma examination subject. The first shows the number and percentage of non-adult and adult students. The second summarizes the frequency, average school-awarded mark, and standard deviation of school-awarded marks for those subgroups that have school-awarded marks. The third table gives the frequency and the average and standard deviation of the total diploma examination mark, the written-response score, and the multiple-choice score for all subgroups.

Two additional tables, page 106, that summarize the data in the subject tables are included after the subject tables.

These tables are not provided as part of the jurisdiction, school, and instructional group reports, as almost all students in most schools and jurisdictions are in the Non-adult Regular School subgroup. However, superintendents of jurisdictions that have significant numbers of students in the other subgroups may request figures for their jurisdictions and schools from the Student Evaluation and Records Branch.

Achievement in English 30 by subgroups is compared in tables 11-1 to 11-3. About one in eight English 30 students writing the June 1989 diploma examination had mature status. Adults with current school-awarded marks received lower school-awarded marks and lower diploma examination marks than non-adults with current school-awarded marks.

Those adults who chose to challenge the diploma examination had a lower average diploma examination score (60.4%) than those adults with current school-awarded marks (63.5%). Within the non-adult group and the adult group, the difference between school-awarded mark averages and diploma examination mark averages was considerably greater for students with school-awarded marks brought forward than for those with current school-awarded marks.

These statistics indicate that recent instruction is of value in increasing diploma examination scores.

Table 11-1
English 30
Maturity Status of Students Writing

Type	Number	Percentage
Non-adult *	12 124	87.4
Adult *	1 744	12.6
Total	13 868	100.0

*Non-adult -- a student who does not have mature status
Adult -- a student who has mature status

Table 11-2
English 30
School-Awarded Marks for Population Subgroups

Subgroup	Number of Students	Average (%)	Standard Deviation (%)
Regular School	13 147	65.6	12.2
Non-adult in School	*11 687*	*65.7*	*12.1*
Adult in School	*1 460*	*64.3*	*12.7*
Non-adult Sch. Mk. Fwd.	385	66.2	12.1
Adult Sch. Mk. Fwd.	56	61.5	9.8

Table 11-3
English 30
Diploma Examination Marks for Population Subgroups

Subgroup	Number of Students	Total Score (%)		Written-Response Raw Score*		Multiple-Choice Raw Score**	
		Avg.	S.D.***	Avg.	S.D.	Avg.	S.D.
Regular School	13 147	66.6	12.2	32.0	6.3	55.1	11.9
Non-adult in School	*11 687*	*66.9*	*12.0*	*32.2*	*6.2*	*55.4*	*11.7*
Adult in School	*1 460*	*63.5*	*13.6*	*30.3*	*6.9*	*52.9*	*13.4*
Non-adult Sch. Mk. Fwd.	385	62.4	11.7	30.4	6.0	51.0	11.8
Adult Sch. Mk. Fwd.	56	51.7	12.2	25.3	6.4	41.9	12.5
Adult Challenging	228	60.4	15.4	28.0	8.2	51.7	14.1
Non-adult No Sch. Mk.	52	61.2	13.6	28.4	7.0	52.5	12.8

*Maximum written-response raw score is 50 marks
**Maximum multiple-choice raw score is 80 marks
***Standard Deviation

Achievement in English 33 by subgroups is compared in tables 11-4 to 11-6. About one in eight English 33 students who wrote the June 1989 diploma examination had mature status. Adults with current school-awarded marks tended to receive higher school-awarded marks and diploma examination marks than non-adults with current school-awarded marks.

Only 21 students (non-adult and adult) had school-awarded marks brought forward for blending with their June 1989 diploma examination marks. These students were lower than average on both the diploma examination and the school-awarded marks.

Adults challenging the diploma examination did quite well on average, exceeding the regular students' average on both written-response and multiple-choice sections of the examination.

Table 11-4
English 33
Maturity Status of Students Writing

Type	Number	Percentage
Non-adult *	4 764	87.8
Adult *	664	12.2
Total	5 428	100.0

*Non-adult -- a student who does not have mature status
Adult -- a student who has mature status

Table 11-5
English 33
School-Awarded Marks for Population Subgroups

Subgroup	Number of Students	Average (%)	Standard Deviation (%)
Regular School	5 071	59.7	10.8
Non-adult in School	*4 603*	*59.4*	*10.6*
Adult in School	*468*	*63.5*	*12.1*
Non-adult Sch. Mk. Fwd.	116	50.9	10.5
Adult Sch. Mk. Fwd.	21	57.4	9.0

Table 11-6
English 33
Diploma Examination Marks for Population Subgroups

Subgroup	Number of Students	Total Score (%)		Written-Response Raw Score*		Multiple-Choice Raw Score**	
		Avg.	S.D.***	Avg.	S.D.	Avg.	S.D.
Regular School	5 071	63.3	11.7	31.6	5.4	43.6	10.9
Non-adult in School	*4 603*	*63.1*	*11.2*	*31.5*	*5.2*	*43.4*	*10.6*
Adult in School	*468*	*65.2*	*15.9*	*32.4*	*7.3*	*45.1*	*13.7*
Non-adult Sch. Mk. Fwd.	116	50.5	10.6	26.2	5.2	33.1	9.7
Adult Sch. Mk. Fwd.	21	44.2	9.0	23.0	5.1	28.8	6.6
Adult Challenging	175	68.1	14.1	32.6	6.7	48.8	12.2
Non-adult No Sch. Mk.	45	61.5	11.4	30.4	4.9	42.8	10.8

*Maximum written-response raw score is 50 marks
**Maximum multiple-choice raw score is 69 marks
***Standard Deviation

Achievement in Social Studies 30 by subgroups is compared in tables 11-7 to 11-9. Fewer than one in fourteen Social Studies 30 students who wrote the June 1989 diploma examination had mature status. Those adults with current school-awarded marks tended to receive school-awarded marks very similar to non-adults with current school-awarded marks, but they earned lower diploma examination marks.

Students with school-awarded marks brought forward and who wrote the diploma examination without further instruction had lower school-awarded marks and much lower diploma examination marks than those with current school-awarded marks.

Adults challenging the diploma examination had considerably lower averages than students with current school-awarded marks.

Table 11-7
Social Studies 30
Maturity Status of Students Writing

Type	Number	Percentage
Non-adult *	10 827	93.1
Adult *	799	6.9
Total	11 626	100.0

*Non-adult -- a student who does not have mature status
Adult -- a student who has mature status

Table 11-8
Social Studies 30
School-Awarded Marks for Population Subgroups

Subgroup	Number of Students	Average (%)	Standard Deviation (%)
Regular School	11 250	66.5	12.8
Non-adult in School	*10 542*	*66.6*	*12.9*
Adult in School	*708*	*65.9*	*12.3*
Non-adult Sch. Mk. Fwd.	236	57.7	11.6
Adult Sch. Mk. Fwd.	19	61.9	15.5

Table 11-9
Social Studies 30
Diploma Examination Marks for Population Subgroups

Subgroup	Number of Students	Total Score (%)		Written-Response Raw Score*		Multiple-Choice Raw Score**	
		Avg.	S.D.***	Avg.	S.D.	Avg.	S.D.
Regular School	11 250	61.9	15.2	16.1	5.1	45.7	11.5
Non-adult in School	*10 542*	*62.0*	*15.1*	*16.2*	*5.1*	*45.7*	*11.5*
Adult in School	*708*	*59.5*	*15.6*	*14.8*	*5.3*	*44.6*	*11.9*
Non-adult Sch. Mk. Fwd.	236	46.1	14.6	12.3	4.6	33.7	11.4
Adult Sch. Mk. Fwd.	19	49.4	16.1	12.2	4.6	37.2	12.4
Adult Challenging	72	53.7	15.9	13.0	4.7	40.6	12.5
Non-adult No Sch. Mk.	49	59.7	15.6	15.1	5.3	44.6	12.1

*Maximum written-response raw score is 30 marks
**Maximum multiple-choice raw score is 70 marks
***Standard Deviation

Achievement in Mathematics 30 by subgroups is compared in tables 11-10 to 11-12. About one in seven Mathematics 30 students who wrote the June 1989 diploma examination had mature status.

The average of current school-awarded marks showed very little difference between non-adults and adults. However, the average of diploma examination marks for students with current school-awarded marks was higher for non-adults than for adults.

Non-adult students with current school-awarded marks achieved the highest average in diploma examination marks.

Students with no current instruction were not as successful as students in the regular school subgroup.

Table 11-10
Mathematics 30
Maturity Status of Students Writing

Type	Number	Percentage
Non-adult *	8 546	85.6
Adult *	1 433	14.4
Total	9 979	100.0

*Non-adult -- a student who does not have mature status
Adult -- a student who has mature status

Table 11-11
Mathematics 30
School-Awarded Marks for Population Subgroups

Subgroup	Number of Students	Average (%)	Standard Deviation (%)
Regular School	9 532	65.7	14.7
Non-adult in School	*8 293*	*65.6*	*14.6*
Adult in School	*1 239*	*66.4*	*15.3*
Non-adult Sch. Mk. Fwd.	194	62.1	14.8
Adult Sch. Mk. Fwd.	54	61.5	16.5

Table 11-12
Mathematics 30
Diploma Examination Marks for Population Subgroups

Subgroup	Number of Students	Total Score (%)		Written-Response Raw Score*		Machine Scored Raw Score**	
		Avg.	S.D.***	Avg.	S.D.	Avg.	S.D.
Regular School	9 532	62.2	18.7	7.1	3.7	33.3	9.3
Non-adult in School	*8 293*	*62.5*	*18.7*	*7.1*	*3.7*	*33.5*	*9.3*
Adult in School	*1 239*	*60.6*	*18.8*	*6.9*	*3.9*	*32.5*	*9.2*
Non-adult Sch. Mk. Fwd.	194	52.7	20.5	5.1	3.8	29.1	10.2
Adult Sch. Mk. Fwd.	54	47.3	18.0	5.0	3.6	25.7	9.1
Adult Challenging	140	47.8	21.5	4.4	4.0	26.6	10.5
Non-adult No Sch. Mk.	59	49.1	23.6	4.6	4.3	27.4	11.9

*Maximum written-response raw score is 13 marks
**Maximum machine-scored raw score is 52 marks
***Standard Deviation

Achievement in Biology 30 by subgroups is compared in tables 11-13 to 11-15. About one in eight Biology 30 students who wrote the June 1989 diploma examination had mature status.

Adult students with current school-awarded marks achieved the highest average in both school-awarded marks and diploma examination marks. The average of current school-awarded marks for adult students was higher than that for non-adult students. However, their diploma examination marks showed very little difference.

Students with no current instruction were not as successful as students in the regular school subgroup.

Table 11-13
Biology 30
Maturity Status of Students Writing

Type	Number	Percentage
Non-adult *	9 491	87.7
Adult *	1 334	12.3
Total	10 825	100.0

*Non-adult -- a student who does not have mature status
Adult -- a student who has mature status

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Table 11-14
Biology 30
School-Awarded Marks for Population Subgroups

Subgroup	Number of Students	Average (%)	Standard Deviation (%)
Regular School	10 321	67.1	13.2
Non-adult in School	*9 173*	*66.8*	*13.2*
Adult in School	*1 148*	*69.4*	*13.0*
Non-adult Sch. Mk. Fwd.	287	58.1	10.1
Adult Sch. Mk. Fwd.	46	60.4	11.8

Table 11-15
Biology 30
Diploma Examination Marks for Population Subgroups

Subgroup	Number of Students	Total Score (%)		Written-Response Raw Score*		Multiple-Choice Raw Score**	
		Avg.	S.D.***	Avg.	S.D.	Avg.	S.D.
Regular School	10 321	63.2	17.8	15.7	6.4	47.5	12.2
Non-adult in School	*9 173*	*63.2*	*17.8*	*15.7*	*6.4*	*47.4*	*12.2*
Adult in School	*1 148*	*63.6*	*17.5*	*15.4*	*6.5*	*48.2*	*11.9*
Non-adult Sch. Mk. Fwd.	287	46.2	14.8	10.0	5.5	36.0	10.4
Adult Sch. Mk. Fwd.	46	43.8	13.8	9.0	5.9	34.6	9.3
Adult Challenging	140	57.8	20.0	13.5	7.2	44.2	13.9
Non-adult No Sch. Mk.	31	48.1	21.3	11.1	7.6	37.0	14.6

*Maximum written-response raw score is 30 marks
**Maximum multiple-choice raw score is 70 marks
***Standard Deviation

Achievement in Chemistry 30 by subgroups is compared in tables 11-16 to 11-18. About one in eight Chemistry 30 students who wrote the June 1989 diploma examination had mature status.

Non-adult students with current school-awarded marks achieved the highest average in both school-awarded marks and diploma examination marks.

The average of school-awarded marks for students with current school-awarded marks showed very little difference between non-adults and adults. However, non-adult students with current school-awarded marks achieved a higher average in diploma examination marks than adult students with current school-awarded marks.

Students with no current instruction were not as successful as students in the regular school subgroup.

Table 11-16
Chemistry 30
Maturity Status of Students Writing

Type	Number	Percentage
Non-adult *	7 689	87.3
Adult *	1 121	12.7
Total	8 810	100.0

*Non-adult -- a student who does not have mature status
Adult -- a student who has mature status

Table 11-17
Chemistry 30
School-Awarded Marks for Population Subgroups

Subgroup	Number of Students	Average (%)	Standard Deviation (%)
Regular School	8 482	67.8	14.1
Non-adult in School	*7 497*	*67.9*	*14.0*
Adult in School	*985*	*67.7*	*14.9*
Non-adult Sch. Mk. Fwd.	168	64.8	14.3
Adult Sch. Mk. Fwd.	34	62.0	13.2

Table 11-18
Chemistry 30
Diploma Examination Marks for Population Subgroups

Subgroup	Number of Students	Total Score (%)		Written-Response Raw Score*		Multiple-Choice Raw Score**	
		Avg.	S.D.***	Avg.	S.D.	Avg.	S.D.
Regular School	8 482	66.3	17.7	8.5	3.4	37.9	9.7
Non-adult in School	*7 497*	*66.6*	*17.7*	*8.6*	*3.4*	*37.9*	*9.7*
Adult in School	*985*	*64.3*	*17.7*	*7.6*	*3.6*	*37.4*	*9.6*
Non-adult Sch. Mk. Fwd.	168	55.8	19.6	6.6	3.8	32.5	10.8
Adult Sch. Mk. Fwd.	34	51.3	13.9	6.0	2.7	29.9	7.6
Adult Challenging	102	54.9	19.4	6.1	3.6	32.2	10.8
Non-adult No Sch. Mk.	24	53.7	20.7	6.2	3.8	31.4	11.8

*Maximum written-response raw score is 14 marks
**Maximum multiple-choice raw score is 56 marks
***Standard Deviation

Achievement in Physics 30 by subgroups is compared in tables 11-19 to 11-21. About one in eight Physics 30 students who wrote the June 1989 diploma examination had mature status.

Ten adult students with school-awarded marks brought forward achieved the highest average in school-awarded marks.

Non-adult students with current school-awarded marks achieved the highest average in diploma examination marks.

Non-adult students with current school-awarded marks achieved higher averages in both school-awarded marks and diploma examination marks than adult students with current school-awarded marks.

Students with no current instruction were not as successful as students in the regular school subgroup.

Table 11-19
Physics 30
Maturity Status of Students Writing

Type	Number	Percentage
Non-adult *	4 241	87.1
Adult *	628	12.9
Total	4 869	100.0

*Non-adult -- a student who does not have mature status
Adult -- a student who has mature status

Table 11-20
Physics 30
School-Awarded Marks for Population Subgroups

Subgroup	Number of Students	Average (%)	Standard Deviation (%)
Regular School	4 673	70.5	13.5
Non-adult in School	*4 116*	*70.8*	*13.5*
Adult in School	*557*	*68.4*	*13.2*
Non-adult Sch. Mk. Fwd.	108	65.7	14.5
Adult Sch. Mk. Fwd.	10	73.8	12.5

Table 11-21
Physics 30
Diploma Examination Marks for Population Subgroups

Subgroup	Number of Students	Total Score (%)		Written-Response Raw Score*		Multiple-Choice Raw Score**	
		Avg.	S.D.***	Avg.	S.D.	Avg.	S.D.
Regular School	4 673	66.3	16.5	9.5	4.8	36.9	7.5
Non-adult in School	*4 116*	*66.7*	*16.6*	*9.7*	*4.9*	*37.0*	*7.6*
Adult in School	*557*	*63.7*	*15.5*	*8.4*	*4.4*	*36.1*	*7.3*
Non-adult Sch. Mk. Fwd.	108	54.8	18.6	6.5	5.0	31.8	9.0
Adult Sch. Mk. Fwd.	10	55.4	19.3	6.4	4.7	32.1	9.5
Adult Challenging	61	51.8	20.4	6.3	5.1	29.9	10.0
Non-adult No Sch. Mk.	17	58.8	18.6	7.4	5.4	33.8	8.8

*Maximum written-response raw score is 21 marks
**Maximum multiple-choice raw score is 49 marks
***Standard Deviation

Tables 11-22 and 11-23, page 106, summarize the preceding tables in this section. The largest subgroup (Non-adult Regular School) is used as the basis for comparison among groups. Students without mature status and with current school-awarded marks represent the typical school situation. The difference between the average for this subgroup and the average for each other subgroup is given in order to aid comparisons of the achievement of the subgroups.

Comparisons between courses should be made cautiously. The figures presented have been adjusted for variation in diploma examination difficulty by using differences from the base group average. However, the diploma examinations also differ in variability of scores (as measured by the standard deviation), and no adjustment has been made for this form of variation. The results are sufficiently precise for broad comparisons between subjects.

Social Studies 30 had a smaller proportion of students with mature status, 6.9%, than the other subjects, which ranged from 12.2% to 14.4% of the regular school population.

Typically, subgroups other than the base group (Non-adult Regular School) had lower average achievement in both school-awarded marks and diploma examination marks. A notable exception was the school-awarded mark for adult regular school students, which was higher than the base group in three subjects: English 33, Mathematics 30, and Biology 30. The only other exceptions for school-awarded marks were adult students with school-awarded marks brought forward in Physics 30, and non-adult students with school-awarded marks brought forward in English 30.

Subgroup differences in average examination marks showed that both non-adult and adult students with school-awarded marks brought forward received markedly lower diploma examination marks, on the average, than the base group. This result is likely due to the large number of students in these subgroups who are attempting to raise their diploma examination marks from earlier writings. Students whose original marks were satisfactory do not rewrite the examination.

Adults with current school-awarded marks were above the base group average for diploma examination marks in English 33 and Biology 30, just as they were for school-awarded marks.

Adults challenging the diploma examination had lower average marks than the base group in all courses except English 33, where their average was 5.0% higher.

Non-adult students without school-awarded marks are relatively uncommon. These students were below the base group average for all subjects.

Table 11-22
Population Subgroup Summary
Mature Status and School-Awarded Mark Average Differences

Subject	% Mature	Difference From Regular Non-adult Average		
		Adult Regular School-Awarded Mark	Non-adult School-Awarded Mark Brought Forward	Adult School-Awarded Mark Brought Forward
English 30	12.6	-1.4	0.5	-4.2
English 33	12.2	4.1	-8.5	-2.0
Social Studies 30	6.9	-0.7	-8.9	-4.7
Mathematics 30	14.4	0.8	-3.5	-4.1
Biology 30	12.3	2.6	-8.7	-6.4
Chemistry 30	12.7	-0.2	-3.1	-5.9
Physics 30	12.9	-2.4	-5.1	3.0

Table 11-23
Population Subgroup Summary
Diploma Examination Mark Average Differences

Subject	Difference From Regular Non-adult Average				
	Adult Regular School-Awarded Mark	School-Awarded Mark Brought Forward		No School-Awarded Mark	
		Non-adult	Adult	Non-adult	Adult
English 30	-3.4	- 4.5	-15.2	- 5.7	- 6.5
English 33	2.1	-12.6	-18.9	- 1.6	5.0
Social Studies 30	-2.5	-15.9	-12.6	- 2.3	- 8.3
Mathematics 30	-1.9	- 9.8	-15.2	-13.4	-14.7
Biology 30	0.4	-17.0	-19.4	-15.1	- 5.4
Chemistry 30	-2.3	-10.8	-15.3	-12.9	-11.7
Physics 30	-3.0	-11.9	-11.3	- 7.9	-14.9

APPENDIX A: GUIDELINES FOR INTERPRETING AND USING THE RESULTS OF THE DIPLOMA EXAMINATIONS

USE OF THE REPORTS

In addition to this *Provincial Report*, superintendents and principals receive a confidential report of results achieved by the students in their jurisdictions or schools. Superintendents may also request similar reports for instructional groups within the school jurisdiction.

Educators in each jurisdiction are encouraged to study the examination results carefully and use them to determine the strengths and weaknesses of their program and resources.

The jurisdiction, school, and instructional reports may be used to help

- evaluate educational programs in each subject;
- improve the quality of educational programs;
- identify the strengths and weaknesses of the individual student, school, and jurisdiction by comparing their results with provincial results.

The reports are *not* intended to be used as the basis for

- evaluating teacher performance, or
- comparing performance between or among schools.

Administrators in each jurisdiction should apply separate locally developed teacher, school, and school system evaluation policies to the tasks of evaluating teacher and school performance.

The information provided in the reports is factual regarding *what* has happened. The interpretation of this information involves many complex considerations of the factors and variables that contribute to achievement.

FACTORS LIMITING THE INTERPRETATION OF EXAMINATION RESULTS

Educators who are interpreting diploma examination results must take into account the following limitations:

1. School-awarded marks and diploma examination marks are complementary measures. The purpose of the examination is to provide a common measure of achievement for students throughout the province. School-awarded marks should reflect *all* important aspects of learning in a course, including those that cannot be measured by time-limited paper and pencil tests. Therefore, differences are to be expected between a student's school-awarded mark and that student's diploma examination mark in a subject. Any comparisons of the two marks should be restricted to group statistics for groups of reasonable size and should be made with full knowledge of the differences between the two measures.

2. The differences between provincial results and local results are affected by jurisdiction, school, and group size, as well as by other factors.

3. Blended mark distributions *cannot* be directly compared to school-awarded mark distributions or to diploma examination mark distributions.

4. Factors affecting student selection of diploma examination courses vary from school to school. These factors must be considered when comparing school or jurisdiction marks with provincial marks:

   •Some schools may have a limited selection of courses. Students with weak academic records who, in other schools, would have selected nonexamination courses will find it necessary to take diploma examination courses for credits.
   •Some schools may have a policy of encouraging students to challenge any diploma examination course, which results in a higher than usual proportion of students taking those courses.
   •Some schools may have a policy of discouraging students with weak academic records from enrolling in particular diploma examination courses, which results in a lower than usual proportion of students taking those courses.

FACTORS THAT MAY AFFECT STUDENT ACHIEVEMENT

Many factors or variables may contribute to student achievement, some of which are:

1. Environment
   - •community environment
   - •school environment
   - •socioeconomic background
   - •family circumstances

2. Student Factors
   - •ability
   - •attitude
   - •motivation
   - •aspiration
   - •academic background
   - •learning style

3. Resources (availability and appropriateness)
   - •programs of study
   - •curriculum guides
   - •resource materials
   - •library services
   - •current textbooks
   - •references

4. Instruction
   - •qualifications of teachers
   - •teacher experience
   - •professional development
   - •teacher morale
   - •teaching strategies
   - •hours of instruction
   - •staff turnover
   - •amount of homework assigned
   - •communication of teacher expectations

A SYSTEMATIC APPROACH
FOR THE EFFECTIVE USE OF DIPLOMA EXAMINATION RESULTS

Diploma examination results can be used constructively as one means of improving the quality of education. A systematic use of these results would include the following steps:

1. Comparing test results for a school or instructional group with the provincial results. Be sure that your comparisons include the

   •total test score,
   •total multiple-choice and written-response scores,
   •subscale scores for multiple-choice and written-response questions (this current administration as well as results over time), and
   •individual multiple-choice and written-response question results.

2. Noting any patterns, anomalies, and/or interrelationships in the results.

3. Hypothesizing relationships between your observations and any of the factors above that may have had an effect on achievement.

4. Considering and implementing a plan that will help improve the quality of education for students.

AN ADMINISTRATIVE MODEL
FOR THE EFFECTIVE USE OF EXAMINATION RESULTS

The following model may be useful for those who wish to develop a constructive system for interpreting diploma examination results. This model is based on work done by Medicine Hat School District #76.

Basic Principles

1. It is desirable and feasible to ask teachers and school administrators to take responsibility for analysing and using provincial test results.

2. The development of analyses statements and action plans by individual schools is a more productive and positive activity than generalizations made by an external source.

3. There are an identifiable group of factors that should be analysed and commented upon when reviewing the results of each test.

4. Subtest results are often more informative than are total test scores.

5. Generalizations should be based upon long-term data.

6. It is *not* necessarily desirable or productive to compare the marks of schools with one another.

7. Standardized tests measure a core of the program being taught. However, some skills and concepts not measured are worth teaching and learning.

8. Ensuring that there is an alignment between the objectives of the curriculum being taught and the test measures being used will increase the level of students' success.

9. Written reports, follow-up by means of written response, and occasional face-to-face meetings are useful means of ensuring that results are appropriately interpreted and used.

Suggested Content for Interpreting Individual School Results

1. Subject, name, grade level, and administration date of the examination(s)

2. Number of students who wrote the examination

3. Profile of students who wrote the examination:

   •noteworthy individual characteristics
   •general or group characteristics
   •previous performance in other years

4. Retention rates: the number of students enrolled in the grade or subject in the previous two years

5. School performance as compared with district and provincial averages

6. Present school performance as compared with previous years

7. Subtest results: a discussion of how students performed on each of the subtests; possible reasons for results; and recommended actions

8. Item analysis: those items where a significant number of students chose a response other than the correct answer; i.e., do the resources being used appropriately present the material being tested?

9. Program emphasis:

   •hours of instruction
   •skills and content emphasized or de-emphasized

10. Instructional practice:

    •methodology
    •curriculum fit
    •resources

11. Program objectives that are not measured by paper and pencil tests but that are worth teaching

12. Recommendations for next year: a listing that describes those actions that should continue to occur, should be enhanced, or should be changed

13. Summary report: general concluding comments regarding the analysis, report, examination, and recommendations

14. Name and signature of teacher or department head and principal

Suggested Procedures for Reporting

1. Teachers, department heads, and/or principals analyse and prepare a written report about each administration of a diploma examination.

2. Principals review and sign the report.

3. The report is shared with central office supervisory personnel.

4. The appropriate central office supervisory personnel prepare a written response to the report and send copies of the response to the teacher, department head, and principal.

5. If possible, all involved staff meet to discuss the report and the response.

6. When necessary or desirable, a more immediate analysis of specific subtest scores may be requested for a specific class, grade, school, or examination.

7. A sampling of the reports will be shared with the Education/ Personnel Committee of the board.

8. All reports will be used as an additional means of recognizing the quality of instruction being delivered to students. The analysis will be used to improve the program being offered and maximize the opportunities for students to be successful.

9. Where results are significantly different from those expected by the school staff, consideration should be given to arrange for a program evaluation that would measure such things as the variance between the program being offered and the specifications for an individual examination.

10. The report for the January and June administrations will include comprehensive retention rates for three years of the program.

APPENDIX B:
STANDARDS FOR DIPLOMA EXAMINATIONS

Standards used for awarding A, B, C, and F grades for all diploma examination subjects are based on *final blended* marks. Scores from the diploma examinations contribute 50% of each student's final grade; the other 50% is provided by the school. Both marks are based on the expectations set in the course of studies.

The ranges of the *final blended* marks for the four letter grades are as follows:

Grade	Final Blended Mark
A	80-100%
B	65-79%
C	50-64%
F	0-49%

During the marking of the diploma examinations, standard-setting procedures are carried out by a representative sample of teachers from across Alberta who are currently teaching the course being examined. Each item on the examination is reviewed in relation to the standards communicated in the course of studies, in order to determine what score is an acceptable level and what score is an outstanding level of achievement. The results are reviewed and compared with the distribution of the letter grades obtained from students' marks from previous administrations.

The marks awarded in June 1989 were consistent with expectations. The examinations were neither too easy nor too difficult. Therefore, no adjustments of marks were necessary.

APPENDIX C:
DIPLOMA EXAMINATION DEVELOPMENT PROCESS

The staff of the Student Evaluation and Records Branch gives great care and attention to the development and marking of all diploma examinations in order to ensure that students' marks on diploma examinations are fair and equitable measures of their achievement.

Many individuals work with the professional staff from the Student Evaluation and Records Branch in the complex process of developing diploma examinations. These include classroom teachers, school and jurisdiction administrators, and representatives from post-secondary institutions, the Curriculum Design Branch, Language Services Branch, and Regional Offices of Education.

The examination development process follows the phases listed below:

1. PLANNING
2. APPROVING EXAMINATION BLUEPRINTS
3. DEVELOPING EXAMINATION QUESTIONS
4. CONSTRUCTING AND ADMINISTERING FIELD TESTS
5. ANALYSING AND REVISING QUESTIONS
6. CONSTRUCTING THE EXAMINATIONS
7. APPROVING THE EXAMINATIONS
8. PRINTING AND ADMINISTERING THE EXAMINATIONS
9. MARKING THE EXAMINATIONS
10. ANALYSING AND REPORTING THE RESULTS

It takes approximately 18 months to complete the development of a diploma examination.

1. PLANNING

The first step in the planning phase for development of a diploma examination is the preparation, under the direction of the Curriculum Design Branch, of specifications based on the goals and objectives of the curriculum for each subject.

Examination developers in each diploma examination subject area then prepare an interim examination blueprint (an overall plan used to guide the development of an examination). If a diploma examination is undergoing extensive revision because of curricular change, or if a new examination is to be developed, an advisory committee of teachers and subject consultants will contribute to decisions about the emphasis and design of the examination.

Questions that must be addressed by examination developers and advisory committees, as examinations are designed and blueprints are drafted, include:

- What knowledge and skills can students be expected to possess?
- How can the various parts of the curriculum best be tested?
- What should be the weighting for each part of the curriculum that is tested?
- How long and how demanding should the examination be?
- What format will produce the most valid results?
- What types of questions will be most valid and reliable? (multiple choice, short answer, extended written response?)
- How should the examination be organized in order to produce valid and reliable results?
- How will students' responses be scored? What will be the criteria for scoring?
- How should the results be reported?
- Who will receive the results?

In order to ensure that each examination is a fair and equitable measure of students' accomplishments in the course, and to ensure that results will be meaningful and reliable, examination developers incorporate statistical as well as curricular standards into the examination design.

Statistical standards include projected examination means, range of question difficulty, and requirements for reporting. For example, the mean of each diploma examination has been set at 65 per cent. This is the mid-point between chance selection (25 per cent) and perfection (100 per cent) rounded off to the nearest five per cent. The range of difficulty of multiple-choice questions is expected to vary from 30 per cent to 85 per cent to ensure that students with varying ability levels are challenged. Each dimension of the curriculum for which results are reported must contain at least six questions if the results are to be meaningful.

2. APPROVING EXAMINATION BLUEPRINTS

Once examination developers and their advisory committees develop an examination design and blueprint including criteria for scoring written response, the proposed design is reviewed by a committee of Alberta Education personnel representing Regional Offices of Education, the Curriculum Design Branch (or Language Services Branch), and the Student Evaluation and Records Branch.

The blueprint and design recommended by the Alberta Education committee are then reviewed by an Examination Review Committee that consists of representatives nominated by the Alberta Teachers' Association, the Conference of Alberta School Superintendents, the Universities Co-ordinating Council, the Public Colleges of Alberta, and Alberta Education. This committee makes recommendations regarding the examination design to the Director of the Student Evaluation and Records Branch.

3. DEVELOPING EXAMINATION QUESTIONS

Following approval of the examination design, format, and blueprints, examination developers plan for question development. On the recommendations of superintendents, classroom teachers from across the province are selected to work on question development committees chaired by examination developers from the Student Evaluation and Records Branch.

Teachers serving on question development committees receive the necessary training regarding technical principles of question construction from the professional examination development staff of the Student Evaluation and Records Branch. The teacher committees develop questions that meet the curricular and technical standards incorporated in the examination design and blueprints, and that will fairly test the skills and concepts that students can be expected to have acquired.

Questions developed in committee are then carefully screened, edited, and revised so that all blueprint requirements and technical standards are met. At this point, copyright approval is sought for testing materials such as literary selections, cartoons, graphs, maps, charts, data sets, etc.

4. CONSTRUCTING AND ADMINISTERING FIELD TESTS

Examination developers at the Student Evaluation and Records Branch construct field tests containing questions developed by teacher committees. Each field test is carefully edited and revised in order to ensure technical and curricular validity and faithfulness to the examination blueprint.

School jurisdiction personnel grant permission for the administration of field tests to students in their systems in January and/or June of each school year.

Based on the geographic and demographic variables expected for the total population that will write a given diploma examination, the Student Evaluation and Records Branch field testing administration staff selects a minimum sample of 250 students to write each field test. Field tests are administered only to students who are nearing completion of the diploma examination subject being tested so that their performances on the field test will be predictive of the performances of students writing the diploma examination.

Student Evaluation and Records Branch professional staff members administer the field tests under secured examination conditions. This procedure allows examination developers to receive first-hand information from teachers and students about examination questions and formats. As well, the procedure ensures test security and uniform administration conditions so that statistical results can be considered reliable.

Teachers whose classes participate in field testing comment on:

- level of difficulty of questions
- curricular validity
- appropriateness of questions, data sets, reading selections, format

- problems with questions, stimulus material, art work
- clarity of instructions
- correspondence between questions and the way in which a concept is taught

Students are also encouraged to discuss the field test with the field test administrator.

All of the data - statistical and anecdotal - from field testing provided the examination developer with accurate and first-hand information that is used to ensure that the final form of each diploma examination is a valid and reliable measure of students' achievement.

5. ANALYSING AND REVISING QUESTIONS

Examination developers carefully analyze the statistical results and teacher comments for each field test to determine the need for additional field testing. Individual questions or question sets requiring changes are revised and submitted for further field testing. If changes are not feasible, questions are discarded.

Those questions and question sets that prove successful in field testing are considered for inclusion in a diploma examination.

6. CONSTRUCTING THE EXAMINATIONS

The diploma examinations are composed of questions and/or question sets that have proven to be valid in field testing. For each diploma subject, three parallel examinations are developed annually for administration in January, June, and August. The three examinations are designed to be parallel in form and equivalent in difficulty. Each examination is constructed according to the approved blueprint (i.e. each will have approximately the same number of questions testing a particular facet of the curriculum as specified by the blueprint). An information bulletin outlining the design, format, and marking criteria for each diploma examination subject is distributed to schools at the beginning of each school year. The information bulletins include changes from previous years' examinations, sample questions, and scoring guides.

Once a final form of a diploma examination is drafted, it receives extensive editing, proofreading, and technical checking.

7. APPROVING THE EXAMINATIONS

The examination developers from the Student Evaluation and Records Branch present the final form of each examination to the Alberta Education committee that represents the Curriculum Design or Language Services Branch and Regional Offices of Education for review and recommendations for improvement.

The recommendations of the Alberta Education committee are incorporated into any additional revisions that are necessary. The examination developers then present the examination to the Examination Review Committee that recommended approval of the examination blueprint in Phase Two of the Examination Development Process. The Examination Review Committee conducts a thorough review of the proposed examination, and recommends approval to the Director of the Student Evaluation and Records Branch.

8. PRINTING AND ADMINISTERING THE EXAMINATIONS

Following approval of the final form of a diploma examination, examination developers ensure completion of additional quality checks that include: editing, proofreading, validating of correct answers by a teacher committee, checking print quality of art work and illustrations, confirming precise match to the blueprint, and completing a final estimate of difficulty for each question.

Each examination is printed and then distributed to schools just prior to the administration dates.

Schools are responsible for ensuring the security of examinations prior to administration, and for ensuring that examinations are administered according to regulations. Each school receives extra copies of the January and June examinations for use in the school.

Administration of diploma examinations is scheduled annually in January, June, and August, and is conducted according to set regulations. Schedules and regulations are published in the *General Information Bulletin* that is distributed to schools each September. Additional copies are available for purchase from the Learning Resources Distributing Centre (telephone 427-2767). The August examinations are confidential and therefore remain secured.

Students who have been identified as having learning and/or physical disabilities may apply for special provisions for examination writing. Included in the special provisions available to such students are the following: brailled examinations, large-print examinations, tape-recorded examinations, additional writing time, use of a word processor, use of a tape-recorder for responses, and use of a sign-language translator. The complete policy for special provisions is printed in the *General Information Bulletin* and is available on request from the Student Evaluation and Records Branch (telephone 427-0010). Following administration, completed examinations are shipped (in accordance with security regulations) to Alberta Education in Edmonton for processing and marking.

9. MARKING THE EXAMINATIONS

Markers for the written response parts of the examinations are nominated by their superintendents and are selected on a proportional basis so that the percentage of markers selected from a geographic area is comparable to the percentage of papers from that area. In order to be selected for marking, a teacher must be currently teaching the subject he or she wishes to mark, must have taught the course for at least two years, and must possess a valid Alberta Teaching Certificate.

The written response parts of the diploma examinations are all marked centrally. The selected classroom teachers are trained in the marking procedures and are supervised during the marking session by the professional staff from the Student Evaluation and Records Branch.

All student and school identification is removed from the papers prior to the marking so that markers have no means of knowing the source of a paper. Written response papers in English 30, English 33, and Social Studies 30 receive three independent readings and are scored in several categories such as quality of language and expression, thought and detail, organization, etc. Students' scores are then calculated by machine. The median score on each dimension is the score awarded. Papers receive a fourth reading on those dimensions where the original three markers' scores are not sufficiently congruent.

Multiple-choice responses are machine scored. During the marking session, each multiple-choice examination is carefully reviewed by a group of at least 20 teachers of the subject under consideration. In this "standard-setting" review, the teachers assess the appropriateness of the standard of achievement built into the examinations.

10. ANALYSING AND REPORTING THE RESULTS

The statistical results of each examination and the recommendations of the standard setters are carefully analysed. The Examination Review Committee may be asked to review the results as well. Reports of local results in each subject are prepared for all school jurisdictions. The provincial results for each subject examined are presented in a provincial report that is distributed in April for the January administration and in September for the June administration. The provincial reports include guidelines for interpretation of results.

Individual student results are mailed about one month after the date on which the examinations were administered. Students who are dissatisfied with their results in any subject may request that their examination in that subject be rescored. The fee for rescoring is $20 per examination. The mark awarded after rescoring supersedes the initial mark.

The "DIPLOMA EXAMINATION DEVELOPMENT PROCESS" is also available in brochure format.

For more information, call the Associate Director of Examination Development for Language Arts and Social Studies or the Associate Director of Examination Development for Mathematics and Sciences at 427-2948.

DIPLOMA EXAMINATIONS PROGRAM
PROVINCIAL REPORT
QUESTIONNAIRE

The Student Evaluation and Records Branch strives to produce documents that will be useful to the educational community. The purpose of the following questionnaire is to garner your opinions about the *Provincial Report* so that these opinions can be considered when the content and format of the report are reviewed prior to January 1990.

Please take a moment to respond to the following questions. Then detach this sheet and send it to:

Mr. Michael Robinson
Assistant Director, Data Analysis and Student Records Services
Student Evaluation and Records Branch
Alberta Education
11160 Jasper Avenue
Edmonton, Alberta T5K 0L2

USE OF THE REPORT

1. My present role is primarily that of

   - teacher ☐ 1
   - school administrator ☐ 2
   - central office administrator ☐ 3
   - school board member ☐ 4
   - other (please specify)_____

2. Please check the box beside the statement that applies to you.

   I read the report, but I DID NOT use it to interpret the results attained by my students. ☐ 5

   I read the report, and I used it to interpret the results attained by the students in

   - my classroom ☐ 6
   - my school ☐ 7
   - my jurisdiction ☐ 8

3. Please respond to the following statement if you have checked boxes 6, 7, or 8 above.

   I have made use of the results to alter the educational program offered in

   - my classroom ☐ 9
   - my school ☐ 10
   - my jurisdiction ☐ 11

CONTENT OF THE REPORT

1. Please judge the usefulness of the information included in the various sections of the report by checking the appropriate boxes below.

	Very Useful	Adequate for Use	Of Some Use	Of No Use
Section 1: Summary of Results	☐ 12	☐ 13	☐ 14	☐ 15
Sections 2 to 8: Specific Diploma Examination Results	☐ 16	☐ 17	☐ 18	☐ 19
Section 9: Diploma Examination French Translation Results	☐ 20	☐ 21	☐ 22	☐ 23
Sections 10: Student Results by Gender	☐ 24	☐ 25	☐ 26	☐ 27
Section 11: Results for Population Subgroups	☐ 28	☐ 29	☐ 30	☐ 31

2. If you wish, please comment further on the content of the report in the space below.

FORMAT OF THE REPORT

1. Please judge the usefulness of the report's format by checking the appropriate boxes below.

	Very Useful	Adequate for Use	Of Some Use	Of No Use
Organization into Separate Sections	☐ 32	☐ 33	☐ 34	☐ 35
Single-Column Presentation of Text	☐ 36	☐ 37	☐ 38	☐ 39
Presentation of Graphs	☐ 40	☐ 41	☐ 42	☐ 43
Presentation of Tables	☐ 44	☐ 45	☐ 46	☐ 47
Blending of Information through Text, Graphs, and Tables	☐ 48	☐ 49	☐ 50	☐ 51

2. If you wish, please comment further on the format of the report in the space below.